Newport News Composite Squadron
September 2009 Safety Briefing

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National Safety Council Calendar

SEPTEMBER 2009				
September 1 - 30	**Campus Fire Safety Month**	Campus Firewatch	Ed Comeau (413) 323-6002 ecomeau@campus-firewatch.com	campus-firewatch NSC Factsheets, Fireworks prevention
September 1 - 30	**National Preparedness Month**	U.S. Department of Homeland Security	(202) 282-8010	ready.gov NSC Preparedness
September 1 - 30	**Sports & Home Eye Safety Month**	Prevent Blindness America	(800) 331-2020 info@preventblindness.org	prevent blindness NSC Factsheets, Injury Protection
September 20 - 26	**National Farm Safety and Health Week**	National Safety Council	(630) 285-1121	nsc.org National Farm Safety and Health Week
September 27 - October 3	**National Chimney Safety Week**	Chimney Safety Institute of America	(317) 837-5362	csia.org National Chimney Safety Week

National Preparedness Month – Bodily Injury

Aviation Safety

http://www.faasafety.gov/hottopics.aspx?id=64

FAASTeam News Release

Contact: Max Trescott, 2008 National CFI of the Year
Posted On: February 12, 2009

FAASTeam Safety Tip #2 - Personal Minimums

Consider both Conventional and Unconventional Personal Minimums

Select and Use Conventional and Unconventional Personal Minimums

The use of a *Personal Minimums Checklist* is one method for identifying and managing risks when you fly. It's an excellent starting point for considering risks, especially for low-time pilots. If you have thousands of hours of experience, it's possible you didn't learn about Personal Minimums when you got your license years ago. To have survived this long, however, you have probably developed your own routine for managing risk, or have just been lucky. Rather than waiting for the luck to run out, take the time now to develop your own Personal Minimums.

First, print a copy of the FAA's Accident Prevention Brochure P-8740-56, called " Personal Minimums Checklist ." Then spend some quiet time reading through the four categories of Pilot, Aircraft, Environment, and External Pressures and decide on the minimums that you'll use to guide your decision making for every flight. Think of it as a way to not only preflight the airplane, but also to preflight the pilot and other risk factors.

In the Pilot category, you might set the minimum number of hours of sleep that you'll always require before making a flight. In the Aircraft category, you might set your minimum fuel reserves at 1 hour in the daytime and 1-1/2 hours at night. That is double the legal minimums but, when you consider that 11 percent of accidents are fuel related and mostly preventable, it makes sense to carry extra fuel.

In the Environment category, you might choose to fly with at least 5 or 6 miles of visibility in the daytime, which, again, is double the legal minimum visibility of 3 miles. Or, although it is legal to take off IFR with zero visibility, you might decide to always require a ceiling and visibility that allow you to return IFR to your departure airport if you encounter a problem after takeoff.

Also, consider unconventional minimums that you will not find on the list. For example, because most night accidents occur when the moon is not in the sky or it is obscured by clouds, you might decide to not fly at night, unless at least a quarter moon is visible. Or, because fatigue is an accident factor, you might decide to never to fly after 11 p.m., or after you've had a combined workday and flying time of, for example, 10 hours. Be creative in selecting personal minimums that fit your knowledge of yourself and known accident factors. Then, never violate the minimums you have established, regardless of the internal or external pressures you may experience to complete a flight.

The FAASTeam has asked Max Trescott, the 2008 National CFI of the Year, to write a series of safety tips. Max, a San Francisco area-based Master CFI, specializes in teaching in and publishing training materials for glass cockpit aircraft. You can read more of his work at www.maxtrescott.com and www.g1000book.com or e-mail him at info@sjflight.com .

June 2000 Volume 43 / Number 6

The sterile cockpit

By Bruce Landsberg

A sterile cockpit has nothing to do with the cleanliness of the physical environment. It has everything to do with a pure mental environment. As pilots, we pride ourselves on the ability to multitask. Doing several things at once, though, may mean that something important falls through the cracks.

Obviously, distractions lead to accidents. It happens every day in nonaeronautical pursuits. A contemporary example is the use of handheld cellular telephones while driving. The tedium of driving makes it seem like the perfect time to get something else done — to multitask. Many recent studies indicate a strong correlation between using cell phones and the increased probability of a crash because of distraction.

There are similarities in aviation. The concept of the sterile cockpit has been around for decades and got its start in the airline community. Intuitively, most people know when they're busy and distractions are noticeable. We can improve our safety record significantly by reducing distraction.

One accident that forced the issue of sterile cockpits onto center stage occurred nearly 12 years ago. A Boeing 727 was planning a departure out of Dallas. The flight was delayed for about 20 minutes from the time it left the ramp until cleared for takeoff. During at least part of this time, the crew discussed a variety of nonoperational topics among themselves and a flight attendant.

The crew reported that the takeoff roll appeared to be normal, with no warning lights or unusual engine instrument indications. The captain stated that the rotation was initially normal but said the aircraft then began to "roll violently." The Boeing struck the ILS localizer antenna approximately 1,000 feet from the end of the runway and came to rest about 3,200 feet from the end of the runway. In the subsequent fire, the aircraft was destroyed and 14 occupants died because of smoke inhalation and burns.

The NTSB determined that the wing flaps and slats were not properly configured for takeoff. The required flap setting was 15 degrees, but the investigation showed that no flaps or slats were extended. On many light aircraft, failing to set the flaps will decrease the performance — but is not usually a "killer" item. In large aircraft like the 727, it is critical. The numbers are revealing. According to the NTSB, "At normal takeoff speeds, at a body angle of 10 degrees with 15 degrees of flap, the accident airplane would have 53,106 pounds of lift available in excess of the weight of the airplane. With the flaps up (zero degrees of flap), the airplane would weigh 984 pounds more than the lift produced."

There was another factor in this accident. The Boeing 727 is equipped with a takeoff warning system to advise the crew when the aircraft is improperly configured for takeoff. The system is activated when thrust lever No. 3 is advanced beyond a certain point. A takeoff warning horn will sound when outboard trailing edge flaps are set at less than five degrees. There was no evidence on the cockpit voice recorder that the warning horn sounded, and in the post-crash inspection the system worked intermittently.

The NTSB determined that the probable cause was the captain's and first officer's inadequate cockpit discipline, which resulted in an attempt to take off without flaps and slats properly configured, and the failure of the take-off configuration warning system. According to the NTSB report, contributing factors were the airline's slow

implementation of improved operating procedures regarding crew checking and lack of aggressive action by the FAA to correct known procedural deficiencies.

FAR 121.542 prohibits cockpit activities not related to safe flight operation during critical phases of flight. As identified in the FAR, they include: all ground operations involving taxi, takeoff, and landing, and all other flight operations below 10,000 feet except cruise flight. Activities such as eating, nonessential conversation between crewmembers or other personnel, and reading the newspaper are forbidden.

In our single-pilot cockpits there is plenty to keep us occupied. When the work load is light it may be perfectly fine to have a casual conversation. Takeoff and landing are obviously busy times but as we have seen from the above, distraction even during taxi can lead to major problems. There is much emphasis on ground operations these days. Runway incursions occur when pilots are not paying attention. Failure to follow ATC instructions is the *number-one cause* of runway incursions for GA pilots. In most cases, the pilot was distracted. It might even have been for a good operational reason, such as setting up the GPS or configuring the aircraft. In some cases, nonpertinent conversation caused just enough mental wandering to miss a hold-short line.

After the Dallas accident, NASA psychologists revealed some interesting human factor observations of flight crews in simulators. From the NTSB report: "Highly effective crews tended to have much more task-oriented communication, and there was an information acknowledgement sequence." Translating from techno-speak, I believe this means that the effective crews remained focused and used a standard demand-response system, even to the point of using specific words.

Since we do not usually have cockpit doors to retreat behind in small aircraft, the pilot in command has to exercise some discipline. Passengers and even other pilots, despite good intentions, can be significant distractors. In our exuberance to fly, the discipline is sometimes forgotten. This doesn't mean you have to be "the great stone face" throughout the flight. It does mean getting the priorities straight.

Pilots, sometimes acting as flight attendants and tour guides, will self-distract. The predeparture briefing that includes seat belt and exit procedures should also include the ground rules for talking during busy times. You may have time to give a brief explanation of what you're doing while you're doing it. This is helpful for new passengers, but don't get too detailed when you're busy. If there is more curiosity than time will allow, explain that you'll get back to them. We do that socially and professionally on many occasions.

On a recent ILS down to minimums, my passenger commented on a variety of topics while I was busy with minor details such as intercepting the localizer, slowing down the airplane, and putting the wheels down. A quick reminder that silence was golden at that moment allowed us to complete the approach uneventfully.

However, there will be times when a passenger will ask a very useful question like, "Is that airplane over there supposed to be that close?" or "Does this little ol' red light mean anything?" Those can be "operationally pertinent" and should not be ignored. To paraphrase Ecclesiastes, there is a time to speak and a time to be silent. Keep the cockpit sterile and your thoughts pure.

Driving Safety

National Safety Council http://downloads.nsc.org/pdf/factsheets/School_Bus_Safety_Rules.pdf

School Bus Safety Rules

For some 25 million students nationwide, the school day begins and ends with a trip on a school bus. Unfortunately, each year many children are injured and several are killed in school bus incidents. School bus related crashes killed 134 persons and injured an estimated 11,000 persons nationwide in 2005, according to data from the National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS).

Over the period from 2000-2005, about 70% of the deaths in fatal school bus related crashes were occupants of vehicles other than the school bus and 19% were pedestrians. About 5% were school bus passengers and 4% were school bus drivers. Of the pedestrians killed in school bus related crashes over this period, approximately 83% were struck by the school bus. Of the people injured in school bus related crashes from 2000 through 2004, about 46% were school bus passengers, 8% were school bus drivers, and another 41% were occupants of other vehicles. The remainder were pedestrians, pedal cyclists, and other or unknown type persons.

Although drivers of all vehicles are required to stop for a school bus when it is stopped to load or unload passengers, children should not rely on them to do so. The National Safety Council encourages parents to teach their children these rules for getting on and off the school bus.

Rules for getting on and off the school bus

Getting on the school bus

- When waiting for the bus, stay away from traffic and avoid roughhousing or other behavior that can lead to carelessness. Do not stray onto streets, alleys or private property.
- Line up away from the street or road as the school bus approaches.
- Wait until the bus has stopped and the door opens before stepping onto the roadway.
- Use the handrail when stepping onto the bus.

Behavior on the bus

- When on the bus, find a seat and sit down. Loud talking or other noise can distract the bus driver and is not allowed.
- Never put head, arms or hands out of the window.
- Keep aisles clear – books or bags are tripping hazards and can block the way in an emergency.
- Before you reach your stop, get ready to leave by getting your books and belongings together.

- At your stop, wait for the bus to stop completely before getting up from your seat, then walk to the front door and exit, using the handrail.

Getting off the school bus

- If you have to cross the street in front of the bus, walk at least ten feet ahead of the bus along the side of the road until you can turn around and see the driver.

- Make sure that the driver can see you.

- Wait for a signal from the driver before beginning to cross.

- When the driver signals, walk across the road keeping an eye out for sudden traffic changes.

- Do not cross the center line of the road until the driver has signaled that it is safe for you to begin walking.

- Stay away from the bus' rear wheels at all times.

Correct way to cross the street

- Children should always stop at the curb or the edge of the road and look left, then right, and then left again before crossing.

- They should continue looking in this manner until they are safely across.

- If student's vision is blocked by a parked car or other obstacle, they should move out to where drivers can see them and they can see other vehicles -- then stop, and look left-right-and left again.

National Safety Council http://downloads.nsc.org/pdf/factsheets/Pedestrian_Safety.pdf

Pedestrian Safety

Approximately 5,900 pedestrians are killed by automobiles every year... 85,000 suffer nonfatal injuries. Almost one-quarter of these victims are children under the age of 15 yet they represent only about 20% of the U.S. population.

By following the few safety tips listed below, you can protect yourself and your children.

- It is critical to teach children to look left-right-left before crossing streets.
- Cross only at designated crossings. Entering traffic mid-block or from between parked cars is dangerous.
- Teach children to never dart out into traffic.

For your information.

- A growing number of communities are implementing measures to make their environments more walkable, ranging from including sidewalks on all newly constructed streets, to implementing widespread traffic-calming measures.
- The physical environment does impact how much and how safely residents can and will walk. In research comparing communities with suburban sprawl (few sidewalks and inaccessible pedestrian destinations like large malls surrounded by parking lots) to traditional communities (with plentiful sidewalks and inviting downtown commercial areas), it was found there were three times as many pedestrian trips in the communities designed with pedestrians in mind.

National Safety Council http://downloads.nsc.org/pdf/factsheets/Drowsy_Driving.pdf

Drowsy Driving

Just like drugs or alcohol, sleepiness slows reaction time, decreases awareness, and impairs judgment. Just like drugs or alcohol, it can be fatal when driving.

- Death rates based on mileage were 3.2 times higher at night than during the day in 2007.
- 37% of drivers surveyed by the National Highway Traffic Safety Administration admitted to falling asleep at the wheel at some point in their driving career.
- 8% admitted doing so in the past six months
- 60% admitted falling asleep while driving on an interstate- type highway with posted speeds of 55 MPH or higher.

The drivers at highest risk are: third shift workers, people that drive a substantial number of miles each day, those with unrecognized sleep disorders, and those prescribed medication with sedatives.

Recognize the symptoms of fatigue

- Eyes closing or going out of focus
- Persistent yawning
- Irritability, restlessness, and impatience
- Wandering or disconnected thoughts
- Inability to remember driving the last few miles
- Drifting between lanes or onto shoulder
- Abnormal speed, tailgating, or failure to obey traffic signs
- Back tension, burning eyes, shallow breathing or inattentiveness

Safety Tips

- Maintain a regular sleep schedule that allows adequate rest.
- When the signs of fatigue begin to show, get off the road. Take a short nap in a well-lit area. Do not simply stop on the side of the road.
- Avoid driving between 12am and 6am

- When planning long trips:
    - Share driving responsibilities with a companion
    - Begin the trip early in the day
    - Keep the temperature cool in the car
    - Stop every 100 miles or 2 hours to get out of the car and walk around; exercise helps to combat fatigue
    - Stop for light meals and snacks
    - Drive with your head up, shoulders back and legs flexed at about a 45 degree angle

Bodily Injury

National Preparedness Month

http://www.ready.gov/america/getakit/kit-print.html

When preparing for a possible emergency situation, it's best to think first about the basics of survival: **fresh water**, **food**, **clean air** and **warmth**.

Recommended Items to Include in a Basic Emergency Supply Kit:

- **Water**, one gallon of water per person per day for at least three days, for drinking and sanitation
- **Food**, at least a three-day supply of non-perishable food
- Battery-powered or hand crank radio and a NOAA Weather Radio with tone alert and extra batteries for both
- Flashlight and extra batteries
- **First aid kit**
- Whistle to signal for help
- **Dust mask**, to help filter contaminated air and plastic sheeting and duct tape to shelter-in-place
- Moist towelettes, garbage bags and plastic ties for personal sanitation
- Wrench or pliers to turn off utilities
- Can opener for food (if kit contains canned food)
- Local maps
- Cell phone with chargers

Additional Items to Consider Adding to an Emergency Supply Kit:

- Prescription medications and glasses
- Infant formula and diapers
- Pet food and extra water for your pet
- Important family documents such as copies of insurance policies, identification and bank account records in a waterproof, portable container
- Cash or traveler's checks and change
- Emergency reference material such as a first aid book or information from www.ready.gov
- Sleeping bag or warm blanket for each person. Consider additional bedding if you live in a cold-weather climate.
- Complete change of clothing including a long sleeved shirt, long pants and sturdy shoes. Consider additional clothing if you live in a cold-weather climate.
- Household chlorine bleach and medicine dropper – When diluted nine parts water to one part bleach, bleach can be used as a disinfectant. Or in an emergency, you can use it to treat water by using 16 drops of regular household liquid bleach per gallon of water. Do not use scented, color safe or bleaches with added cleaners.
- Fire Extinguisher
- Matches in a waterproof container
- Feminine supplies and personal hygiene items
- Mess kits, paper cups, plates and plastic utensils, paper towels
- Paper and pencil
- Books, games, puzzles or other activities for children

National Safety Council http://downloads.nsc.org/pdf/factsheets/Portable_Generator_Safety_Tips.pdf

Portable Generator Safety Tips

In an emergency, portable electric generators offer lifesaving benefits when outages affect your home or business. They can safely power important electrical equipment such as portable heating units, computers, water pumps, freezers, refrigerators and lighting. However, portable generator use can also be very hazardous. If you plan on using an emergency generator, it's essential that you take precautions for your safety and the safety of those working to restore power.
The most effective way to avoid portable generator mishaps is to make sure you fully understand the proper operating procedures. Read and follow the manufacturer's guidelines before operating or maintaining your generator – and don't forget to use common sense.

Follow these tips for safe portable generator use:

- Always read and follow the manufacturer's operating instructions before running generator
- Engines emit carbon monoxide. Never use a generator inside your home, garage, crawl space, or other enclosed areas. Fatal fumes can build up, that neither a fan nor open doors and windows can provide enough fresh air.
- Only use your generator outdoors, away from open windows, vents, or doors.
- Use a battery-powered carbon monoxide detector in the area you're running a generator.
- Gasoline and its vapors are extremely flammable. Allow the generator engine to cool at least 2 minutes before refueling and always use fresh gasoline. If you do not plan to use your generator in 30 days, don't forget to stabilize the gas with fuel stabilizer.
- Maintain your generator according to the manufacturer's maintenance schedule for peak performance and safety.
- Never operate the generator near combustible materials.
- If you have to use extension cords, be sure they are of the grounded type and are rated for the application. Coiled cords can get extremely hot; always uncoil cords and lay them in flat open locations.
- Never plug your generator directly into your home outlet. If you are connecting a generator into your home electrical system, have a qualified electrician install a Power Transfer Switch.
- Generators produce powerful voltage - Never operate under wet conditions. Take precautions to protect your generator from exposure to rain and snow.

Sports and Home Eye Safety Month

http://www.nsc.org/resources/factsheets/hl/eye_injury_protection.aspx

Protecting your eyes from injury

The typical eye injuries occur by rubbed or abraded foreign matter, such as metal chips, dirt particles, and splinters, or by striking the eye; surface wounds, such as abrasions, scratches, and foreign bodies (splinters and chips) are among the most common types of injuries to the eyes. Other hazards include, but are not limited to, chemicals, adhesives, radiation, tools, and equipment. The highest categories contributing to eye injuries are related to household, workplace and sports.

On-the-job eye protection

You may be exposed to several hazards at the same time. The right equipment can protect your eyes against irritation and injury. Ask your supervisor or industrial hygienist to help you select the right eye protection.

If you need prescription eyeglasses, make sure your goggles or spectacles have prescription eyeglass lenses or wear extra protection over your prescription eyeglasses. Contact lenses don't provide protection from on-the-job eye hazards. If you wear contact lenses, be extra cautious around gases, vapors, fumes, and dust. Possible reaction can occur. Wear eye protection equipment in addition to contact lenses. Follow the specific management policies on contact lenses in your workplace.

Spectacles -- Semi/flat-folded sideshields. Provide primary protection against impact and optical radiation. Sideshield spectacles are recommended.

Goggles -- There are many different kinds of goggles that can vary in appearance and protection.

Flexible fitting, regular ventilation. Cushion the face, protect eyes at sides, top, and bottom.

Flexible fitting, hooded ventilation. Protect against impact, sparks, chemical splashes, and dust.

Cushioned fit, rigid body. Protect against impact, sparks, chemical splashes, irritating mists, and dust.

Welding goggles, eyecup type, filter lenses. Ideal for protection from glare and sparks.

Chipping goggles, eyecup type, clear safety lenses. Protect against hot sparks and nuisance dust.

Face Shield -- Plastic or mesh window. Designed to protect the whole face; must be supplemented with safety glasses.

Welding Helmet -- Stationary window or lift-front window. Protection from welding, soldering, and brazing. Must be supplemented with safety glasses.

Off-the-job eye protection

Four out of ten accidents that cause blindness happen at home. Off-the-job eye injuries happen because of:

Do-it-yourself work on cars and homes.
Cooking accidents.
Chemical splashes from pesticides, fertilizers, drain cleaners, and cleaning sprays.
Sports injuries while playing tennis, racquetball, baseball, etc.

Wear the right protection for the job you are doing

Choose sunglasses that offer protection from the sun's ultraviolet rays.
Wear eye protection while doing repair jobs and working with chemicals at home.
Wear eye protection when playing ball sports.
Wear eye protection over contact lenses and prescription eyeglasses.

What to do in case of an emergency

Chemical Splash

Don't squeeze eyes shut. Hold them open with thumb and index finger.
Flood eyes with cool, clean water for 15-20 minutes.
Get medical help as soon as possible. If you can, have the chemical container and its label available for evaluation.
Don't use another chemical to neutralize the spilled chemical.

Flying Particles

Don't try to remove anything embedded in the eye. You could cause further damage.
Don't pull or squeeze the eye.
Cover both eyes to prevent movement.
Get medical help as soon as possible.

Radiation Injuries, Burns

If the eyes are exposed to intense heat, flames, lasers or arc welding radiation, apply ice packs to relieve the pain.
Get medical attention as soon as possible.

Blows to the Eyes

Apply ice packs to control swelling and relieve the pain.
Cover both eyes to prevent movement.
Get medical attention as soon as possible.

Eyestrain

Glare, poor lighting and long periods spent at video display terminals (VDT) can cause eye fatigue, soreness, and headaches.
Improve the job-site lighting.
Give eyes adequate rest.

AOPA Safety Pilot Article - Jul 2007 http://www.aopa.org/asf/asfarticles/2007/sp0707.html

What was he thinking?

Safety Pilot

By Bruce Landsberg

AOPA Air Safety Foundation Executive Director Bruce Landsberg has rolled a number of aerobatic aircraft but never one in the Normal category.

All aircraft accidents are unfortunate, some are tragic, and a few defy any attempt to rationalize what happened. And as we go through this process, remember that bad judgment is not unique to general aviation. It happens on the highways daily, but as pilots we like to think we're above all that, if you'll pardon the pun.

It might be helpful to understand the thought process that led the pilot in the following mishap to fly as he did. The investigation is in preliminary status so there will likely be some changes, but circumstantial evidence is strongly pointing to some regrettable decision making. Accident investigation seeks to answer why something happened and how similar catastrophes might be prevented. That may prove to be a tall order.

The latest AOPA Air Safety Foundation *Joseph T. Nall Report* still ranks maneuvering flight as one of the top aircraft junk producers. The NTSB defines *maneuvering* as "aerobatics, low pass, buzzing, pull-up, aerial application maneuver, turn to reverse direction (box-canyon-type maneuver), or engine failure after takeoff and the pilot tries to return to the runway." A notable point is that the number of maneuvering accidents is down significantly from 1996: 135 to 80. Denominator calculations to determine rates are complex and measuring exposure accurately is almost impossible for GA, so pronouncements of doom, or unbridled success, should be weighed carefully.

The accident

On April 22, 2007, at 2:51 p.m. Eastern Daylight Time, a Beechcraft Baron BE-58, operating as an FAR Part 91 personal flight, broke up in flight in the vicinity of Hamilton, Georgia. Weather does not appear to have been a factor. The private pilot and four passengers were fatally injured. The flight originated from Gulf Shores, Alabama, at about 1 p.m. Central Daylight Time, headed toward Georgia under VFR.

A witness heard an airplane approaching that sounded as if it was performing aerobatic maneuvers. This is speculative since the witness could not see the airplane, but as the engine noise increased, the aircraft appeared and was descending very fast in a 45- to 60-degree nose-down attitude. A wing or part of the tail separated from the aircraft. A friend of the pilot told a police officer at the accident scene that the accident pilot's "flying skills were below his standards because the pilot was known for overstressing the planes he flew." The friend told other pilots that the accident pilot "would probably crash within the next year."

Another friend heard the accident pilot say, "I think I can roll this airplane." That same person noted, "The pilot had been at Sun 'n Fun in Lakeland, Florida, a few days prior to the accident and had observed an [airshow] performer

rolling a Beech[craft] 18, and the deceased pilot just kept the rolling issue in his head." The accident pilot also had flown with a retired airline pilot in a Beechcraft Baron 55 who had rolled his airplane.

Another pilot was in the right-front seat of the accident airplane on April 19, 2007, on a return flight from Sun 'n Fun with two other passengers on board. The accident pilot stated, "I want to try something." He then banked the airplane to the left, then back to the right, and stated, "I believe it's possible to roll this airplane."

The pilot started a descent, and then pulled the aircraft up and rolled into a knife-edge attitude, according to the NTSB. The right-seat pilot told the NTSB, "It got me out of my comfort zone, and I could not handle it." The right-seat pilot grabbed the flight controls, leveled the airplane, and exclaimed, "I cannot do this." They descended to 7,500 feet and leveled off. A short time later, the pilot deliberately shut down the right engine and feathered the propeller, and they continued toward Griffin, Georgia, in cruise flight. He later restarted the engine, and they descended for a normal landing. Engine-out practice is essential in flying twins, but it's far better done in a simulator, if one is available, and it should never be done in an aircraft with passengers aboard.

Maneuvering accidents

There are more than 30 accidents dating back to 1983 that were classified as aerobatic maneuvering involving aircraft that were not approved for such. This is an imprecise estimate because of the complexity in sorting, but it shows this to be a relatively uncommon phenomenon. Aerobatic maneuvers in conventional multiengine aircraft were developed into a high art form by Bob Hoover, who performed for decades in the Shrike Commander. Hoover also has been called one of the greatest stick-and-rudder pilots of all time. He's flown his routine hundreds, if not thousands, of times and thrilled airshow crowds all over the world. Not many of us would try to emulate Hoover without a tremendous amount of specialized training.

Extreme unusual attitudes in twins are not always benign either. There have been some spectacular failures. A Partenavia twin was lost in the 1980s when the pilot was executing a high-speed pass over the runway at about 250 feet and then began a rapid pull-up, with the results captured on video. Both wings separated outboard of the engine nacelles. The investigation showed that the separation speed was 220 knots. VNE was 193 knots. The NTSB calculated that with an 8-degree nose-up pitch, the G load at the time of the wing failure was 8.3. Utility category limits are 4.4 positive Gs, so the predictable happened.

Perhaps the most famous multiengine roll of all time happened in August 1955 when the Boeing Dash 80, predecessor to the Boeing 707, was rolled by test pilot Tex Johnson. Boeing didn't fire Johnson but made it very clear that if he or any other company pilots ever did it again they would be out of a job and turned over to the Civil Aeronautics Administration.

Moot point

So, although properly performed aerobatics can be done in twins, they are illegal without an aerobatic waiver and carry a much higher risk than flight within the approved design envelope. The April 22 accident pilot, having had the Baron for only a few weeks, had neither the training nor the skill to do what he may have attempted to do. I also really have to fault the old airline pilot who, if true, felt compelled to show off and set a terrible example for an impressionable individual.

There is another aspect to the accident that will be thoroughly reviewed by the NTSB — the condition of the Baron, which reportedly had well more than 10,000 hours as a trainer. There were rumors of some pre-existing cracks in parts of the structure, which might have led to an earlier in-flight failure than may have happened in a lower-time

machine. However, if the aircraft was being operated outside of the approved flight envelope, the point becomes moot. At this point we have no evidence one way or the other.

Now, let's assume the role of the NTSB and the FAA, which are charged with making recommendations. We can talk about aeronautical decision making (ADM) and lack of judgment, which appear to be the proximate cause of this tragedy. It's easy to analyze after the fact and to come to conclusions that are impossible to prove. The news media and the legal system are often experts in hindsight bias, so sitting in judgment should be done with some humility. It is my fervent hope that there is some other explanation to this accident than what appears to be the leading theory at press time.

We had another bad example of poor ADM with the recent loss of a Canadair regional jet on a positioning flight where the crew decided to climb to Flight Level 410 and got to horsing around at eight miles high. The crew flamed out both engines and then failed to follow the restart procedure. There were no passengers aboard. The pilots paid with their lives, the airline lost an aircraft, and insurance costs went up while the public's opinion of aviation went down.

Lessen the potential

If that can happen in the tightly controlled, highly regulated airline world, what chance is there to reasonably predict these fiascos in personal aviation? The sad truth and hard reality are that it's impossible. However, there are some things we can do to lessen the potential. It will take some of the wonderful spontaneity out of doing forbidden things in airplanes, but for the sake of your passengers, the reputation of GA, and a host of obvious financial reasons, consider these: Fly as if you had to explain every flight to an NTSB law judge. Fly as if the most valuable people in your life were aboard. Fly as if your eternal pilot reputation depended upon it. Or fly as if you had a winning $300 million lottery ticket in your wallet.

Try this on your passengers the next time you take to the sky: "OK, gang, I'm about to try a maneuver that I haven't practiced and have had no training in. The aircraft is prohibited from this type of maneuver, and it's never been tested by the manufacturer." (Depending on the type of maneuver, you can add, "We're going to fly really close to the ground and well below legal limits.") Then say, "There's also a good chance that we could all die if I mess this up, but if I pull it off it will be way cool! So, are you in?" Wanna bet what the reaction would be?

Most of us aren't nearly that good or paid well enough (as test pilots) to operate the aircraft outside the envelope. If another pilot asks you to "watch this," refuse, as did the pilot who may have saved the lives of the passengers on the earlier flight from Sun 'n Fun. If you know of someone who is consistently a bad actor — and I'm not talking about just the occasional bad landing or difference of opinion in the traffic pattern — try talking to him. If that's not possible, mention it to the airport manager, or if you know the pilot, send him a copy of this column or one of ASF's Safety Advisors, which are free and available online or as hard copy. Intervention sometimes works; sometimes it doesn't. Pilots don't need to show off since they're already part of an extremely exclusive group. Less than two-tenths of 1 percent of the U.S. population holds a pilot certificate, and we need you alive and flying for a long time.